

## **Critical Behavior of CFC-113 and Alternative Refrigerants (HFC-23, HFC-32, HFC-125, HFC-152a)**

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The alternative refrigerants would replace the ozone absorbing ones, consequently the study of their physical properties (especially near the critical point) is the problem of today. The purpose of this work is the investigation of usual and alternative refrigerants' coexistence curve (CC) forms and determination of the CC equation critical exponents and amplitudes.

The measurements of the refraction index temperature dependencies along the coexistence curve for CFC-113 was made by prisms' method and by Teopler's shliren method [1]. Experimental data for the alternative refrigerants were received in [2]. The method of data treatment proposed in [3-5] was used. The exponents and amplitudes in the scaling equation were found out as free parameters. Dependence of effective exponents upon the temperature interval relatively to the critical temperature was studied. Approximation of experimental data by the equation with the fixed critical indexes was also derived.

For all the studied objects the critical exponents  $\beta_0$  in the CC equation coincide (taking into account the experimental errors):  $\beta_0 = 0.35 \pm 0.01$ . This value contradicts both with classical theory and three-dimensional Ising model. The CC diameter singularities (exponents  $\beta_1$ ) also coincide for all objects and contradict with classical theory and three-dimensional Ising model.

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